

**What is Claimed is:**

1. A method for reducing discomfort caused by transcutaneous stimulation, comprising:  
providing transcutaneous stimulation;  
reducing the transcutaneous stimulation at a first location; and  
substantially maintaining the transcutaneous stimulation at a second location.
2. The method of claim 1, wherein the transcutaneous stimulation is electrical.
3. The method of claim 1, wherein a magnetic stimulation device provides the transcutaneous stimulation.
4. The method of claim 3, wherein the magnetic stimulation device comprises a magnetic core that saturates at 0.5 Tesla or greater.
5. The method of claim 3, wherein the magnetic stimulation device comprises a magnetic core with a non-toroidal geometry.
6. The method of claim 1, wherein the first location is relatively proximate to the cutaneous surface.
7. The method of claim 1, wherein the first location comprises at least one of the following: tissue, nerves and muscle relatively proximate to the cutaneous surface.
8. The method of claim 1, wherein the second location is relatively deeper than the first location.
9. The method of claim 1, wherein the second location comprises brain tissue.
10. The method of claim 1, wherein the second location requires transcutaneous stimulation for treatment.
11. The method of claim 1, further comprising locating a conductor on a treatment area relative to the first location.

12. The method of claim 11, further comprising locating the conductor on a transcutaneous stimulation device relative to the first location.
13. The method of claim 11, wherein the conductor reduces stimulation of a cutaneous-proximate area on the patient.
14. The method of claim 1, further comprising adjusting the reducing of the transcutaneous stimulation at the first location.
15. The method of claim 14, further comprising applying a signal to provide the adjusting of the reducing of the transcutaneous stimulation at the first location.
16. The method of claim 15, wherein the signal is inversely proportional to another signal used to create the transcutaneous stimulation.
17. The method of claim 15, wherein the signal is analog.
18. The method of claim 15, wherein the signal is digital.
19. The method of claim 1, wherein the reducing comprises modifying an electric field created by the transcutaneous stimulation.
20. The method of claim 19, wherein the modification of the electric field occurs through modification of the magnetic flux created by the transcutaneous stimulation.
21. The method of claim 1, wherein the reducing comprises modifying the magnetic field created by the transcutaneous stimulation.
22. The method of claim 1, further comprising applying a flexible circuit pad to the patient.
23. The method of claim 22, further comprising applying the flexible circuit pad to a device creating the transcutaneous stimulation.
24. A system for reducing discomfort caused by a magnetic stimulation device, comprising:

at least one conductor located peripheral to the magnetic stimulation device, wherein the conductor is adapted to reduce surface-proximate stimulation induced by the magnetic stimulation device.

25. The system of claim 24, further comprising a circuit in communication with the conductor.
26. The system of claim 24, further comprising a detection device for determining an output of the magnetic stimulation device.
27. The system of claim 25, wherein the detection device is a conductive coil.
28. The system of claim 25, wherein the detection device is an inductor.
29. The system of claim 28, wherein the inductor is in communication with a current provided to the magnetic stimulation device.
30. The system of claim 26, wherein the detection device determines characteristics of a magnetic field created by the magnetic stimulation device.
31. The system of claim 26, wherein the detection device determines characteristics of an electric field created by the magnetic stimulation device.
32. The system of claim 26, wherein the detection device comprises a ferrite material.
33. The system of claim 24, further comprising an amplifier in communication with the detection device.
34. The system of claim 24, further comprising a signal generator in communication with the circuit and the detection device.
35. The system of claim 24, wherein the conductor has certain physical and electrical characteristics to reduce surface-proximate stimulation induced by the magnetic stimulation device.

36. The system of claim 35, wherein the physical and electrical characteristics include at least one of the following: conductivity, inductance, length, width, aspect ratio and surface area.
37. The system of claim 24, wherein the conductor is adapted to ignore therapeutic stimulation induced by the magnetic stimulation device.
38. The system of claim 24, wherein the conductor is located between a magnetic stimulation device and a patient.
39. The system of claim 24, wherein the conductor is attached to a flexible circuit pad.
40. The system of claim 26, wherein the circuit and the detection device are attached to a flexible circuit pad.
41. The system of claim 26, wherein the detection device is attached to a stimulation circuit for the magnetic stimulation device.
42. The system of claim 24, wherein the conductor is a flat metallic device.
43. The system of claim 24, wherein the conductor has an area of in the range of 1 centimeter<sup>2</sup> to 40 centimeter<sup>2</sup>.
44. The system of claim 24, wherein the conductor is a device capable of penetrating hair.
45. The system of claim 24, wherein the conductor is a comb-shaped device.
46. The system of claim 24, wherein the conductor is located in a particular location on a patient.
47. The system of claim 24, wherein the conductor is located in a particular location on the magnetic stimulation device.

48. The system of claim 25, wherein the detection device provides a signal to the conductor via the circuit.
49. The system of claim 48, wherein the signal is representative of the output of the magnetic stimulation device.
50. The system of claim 49, wherein the signal is analog.
51. The system of claim 49, wherein the signal is digital.
52. The system of claim 49, wherein the signal is inversely proportional to a stimulation waveform applied to the magnetic stimulation device.
53. The system of claim 24, wherein the reducing of the surface-proximate stimulation by the magnetic stimulation device occurs by reducing a magnetic flux density.
54. The system of claim 24, wherein the reducing of the surface-proximate stimulation by the magnetic stimulation device occurs by superimposing a magnetic field created by the magnetic stimulation device with a magnetic field created by the conductor.
55. The system of claim 24, wherein the magnetic stimulation device comprises at least one arc-shaped cores.
56. The system of claim 55, wherein the arc-shaped cores are positioned relative to one another so that their magnetic fields superimpose and are additive.
57. The system of claim 24, wherein the conductor is provided electrical energy substantially simultaneously with electrical energy provided to the magnetic stimulation device.
58. The system of claim 57, wherein the electrical energy provided to the conductor and the electrical energy provided to the magnetic stimulation device are of opposite polarity.

- 59. The system of claim 57, wherein the electrical energy provided to the conductor is a current that is derived from a voltage provided to the magnetic stimulation device.
- 60. The system of claim 24, wherein the conductor has a high aspect ratio.
- 61. The system of claim 24, wherein a relatively longer dimension of the conductor is placed along a similar direction as an electric field vector induced by the magnetic stimulation device.
- 62. The system of claim 24, wherein the conductor is arc-shaped.
- 63. The system of claim 24, wherein the conductor does not magnetically saturate relative to a magnetic field created by the magnetic stimulation device.
- 64. The system of claim 24, further comprising insulating material for preventing undesired electrical conduction with the flexible circuit pad.
- 65. The system of claim 25, wherein the detection device is a loop having a number of turns based on the output of the magnetic stimulation device.
- 66. The system of claim 65, wherein a plane of the loop is orthogonal to the magnetic field created by the magnetic stimulation device.
- 67. The system of claim 65, wherein the loop has an area of in the range of 1 centimeter<sup>2</sup> to 40 centimeter<sup>2</sup>.